



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

Tech Exhibit
7.0-039

August 15, 2003

National Aeronautics and Space Administration
John F. Kennedy Space Center
ATTN: Randall E. Scott
Radiation Safety Officer
Mail Code: TA-C2
Kennedy Space Center, FL 32899

SUBJECT: TRANSMITTAL AND EXPLANATION OF RENEWAL TO LICENSE
NO. 09-11149-03 (REFERENCE: MAIL CONTROL NO. 260697; DOCKET
NO. 030-14904)

Dear Mr. Scott:

Enclosed please find Amendment No. 09 renewing your NRC license. **We may have made significant additions or deletions to your license, therefore, you should review the enclosed document carefully and be sure that you understand all conditions.** If there are any errors or questions, please notify this office (ATTN: Ms. Janice Kirby at 404-562-4719) so that we can provide appropriate corrections and answers.

NRC expects licensees to conduct their programs with meticulous attention to detail and high standard of compliance. Because of the serious consequences to employees and the public that can result from failure to comply with NRC requirements, you must conduct your radiation safety program according to regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Notify NRC in writing of any change in mailing address.
3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC promptly, in writing, and request termination of the license:
 - a. When you decide to terminate all activities involving materials authorized under the license; or
 - b. If you decide not to acquire or possess and use authorized material.
4. Request and obtain a license amendment before you:
 - a. Change Radiation Safety Officers;
 - b. Order byproduct material in excess of the amount, radionuclide, or form authorized on the license;

- c. Add or change the areas of use or address(es) of use identified in the license application or on the license; or
 - d. Change the name or ownership of your organization.
5. Submit a complete renewal application or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 60 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations.

In addition, please note that NRC Form 313 requires the applicant, by signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or certifying official rather than a consultant.

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application or supplemental correspondence with NRC may result in enforcement action against you. This could include issuance of a Notice of Violation, or imposition of a Civil Penalty, or an order suspending, modifying or revoking your license as specified in the most current version of "General Statement of Policy and Procedures for NRC Enforcement Actions," (Enforcement Policy) NUREG-1600.

In accordance with 10 CFR 2.790 of NRC's "Rules of Practice," a copy of this letter and Enclosure 1 will be available electronically for public inspection in NRC's Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Thank you for your cooperation.

Sincerely,



Bryan A. Parker, Health Physicist
Division of Nuclear Materials Safety

Enclosures: 1. Amendment No. 09
License No. 09-11149-03

MATERIALS LICENSE

ant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. National Aeronautics and Space Administration</p> <p>2. John F. Kennedy Space Center Mail Code: TA-C2 Kennedy Space Center, Florida 32899</p>	<p>In accordance with the application dated February 21, 2003</p> <p>3. License No. 09-11149-03 is renewed in its entirety to read as follows:</p> <p>4. Expiration Date: August 31, 2013</p> <p>5. Docket No. 030-14904 (Supersedes 09-21233-02)</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material with atomic numbers 1 through 83, inclusive</p> <p>B. Any byproduct material with atomic numbers 1 through 84, inclusive; and Americium 241 and Curium 244</p> <p>C. Thorium 228</p> <p>D. Depleted uranium</p> <p>E. Plutonium 238</p> <p>F. Plutonium 239</p> <p>G. Californium 252</p> <p>Any byproduct material with atomic numbers 1 through 83, inclusive</p>	<p>7. Chemical and/or physical form</p> <p>A. Any, except as a sealed source</p> <p>B. Sealed, plated or foil source</p> <p>C. Sealed or plated source</p> <p>D. Any metal component in non-dispersible form</p> <p>E. Sealed or plated source</p> <p>F. Sealed or plated source</p> <p>G. Sealed neutron source</p> <p>H. Sealed, plated or foil source</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not to exceed 3.7 gigabecquerels (GBq) [100 millicuries (mCi)] per radionuclide and 185 GBq [5 curies (Ci)] total</p> <p>B. Not to exceed 3.7 GBq (100 mCi) per source except Hydrogen 3 - not to exceed 370 GBq (10 Ci) per source</p> <p>C. 370 kilobecquerels (kBq) [10 microcuries (uCi)]</p> <p>D. 55 kilograms</p> <p>E. 370 kBq (10 uCi)</p> <p>F. 370 kBq (10 uCi)</p> <p>G. 3.7 GBq (100 uCi)</p> <p>H. Not to exceed 3.7 terabecquerels (100 Ci) per radionuclide</p>

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License No.
09-11149-03Docket No. 030-14904
(Supersedes 09-21233-02)Amendment No.
09

9. Authorized Use:

- A. - G. For possession, storage, and use in research and development as defined in Section 30.4, 10 CFR Part 30 including instrument calibration; analysis of swipe test samples; and for collection and storage of licensee material/waste incident to transfer to licensed recipients.
- H. For collection and storage incident to transfer to authorized recipients.

CONDITIONS

10. Licensed materials may be used at the Kennedy Space Center, Merritt Island, Florida; Cape Canaveral Air Force Station, Florida; and at temporary job sites of the licensee anywhere in the United States.

The Radiation Safety Officer (RSO) for this license is Randall E. Scott.

12. Licensed material shall only be used by, or under the supervision of, individuals designated in writing by the Radiation Safety Committee, David A. Tipton, M.D., Chairperson.
13. Licensed material shall not be used in or on human beings.
14. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
15. Experimental animals, or the products from experimental animals, that have been administered licensed materials shall not be used for human consumption.
16. This license does not authorize commercial distribution of licensed material.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License No.
09-11149-03Docket No. 030-14904
(Supersedes 09-21233-02)

Amendment No.

09

17. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
- E. Sealed sources and detector cells need not be leak tested if:
- (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used.
- However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The leak test shall be capable of detecting the presence of 185 becquerels (Bq) [0.005 microcuries (uCi)] of radioactive material on the test sample. If the test reveals the presence of 185 Bq (0.005 uCi) or more of removable contamination, a report shall be filed with the U. S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the appropriate U.S. Nuclear Regulatory Commission, Regional Office referenced in Appendix D of 10 CFR Part 20. The report shall specify the source involved, the test results, and corrective action taken.
- G. The periodic leak test required by this Condition does not apply to sealed sources installed or maintained in readiness in space flight hardware (or backup space flight hardware) prior to launch.
- H. The licensee is authorized to collect leak test samples for analysis by the licensee. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License No.
09-11149-03Docket No. 030-14904
(Supersedes 09-21233-02)Amendment No.
09

18. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
19. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.
20. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.
21. Maintenance, repair, cleaning, replacement, and disposal of foils contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.
22. A. Detector cells containing a titanium tritide foil or a scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperatures from exceeding that specified in the certificate of registration referred to in 10 CFR 32.210.
- B. When in use, detector cells containing a titanium tritide foil or a scandium tritide foil shall be vented to the outside.
23. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash, provided:
- A. Waste to be disposed of in this manner shall be held for decay a minimum of ten half-lives.
- B. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.
- C. A record of each such disposal permitted under this license Condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License No.
09-11149-03Docket No. 030-14904
(Supersedes 09-21233-02)

Amendment No.

09

24. Radioactive waste generated shall be stored in accordance with the statements, representations and procedures included with the waste storage plan described in the licensee's application dated June 30, 1994.
25. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
26. Notwithstanding the requirements of tie-down Condition 29, the licensee is authorized to make program changes and changes to procedures specifically identified in the application dated February 21, 2003, which were previously approved by the Commission and incorporated into the license without prior Commission approval as long as:
- A. the proposed revision is documented, reviewed, and approved by the licensee's Radiation Safety Committee in accordance with established procedures prior to implementation;
 - B. the revised program is in accordance with regulatory requirements, will not change the license conditions, and will not decrease the effectiveness of the Radiation Safety Program;
 - C. the licensee's staff is trained in the revised procedures prior to implementation; and
 - D. the licensee's audit program evaluates the effectiveness of the change and its implementation.
27. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the limits specified in 10 CFR 30.72 which require consideration of the need for an emergency plan for responding to a release of licensed material.
28. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material as follows:
- A. For unsealed licensed material to quantities less than 10^3 times the applicable limits in Appendix B, 10 CFR Part 30 as specified in 10 CFR 30.35(d) and for readily dispersible source material to less than 100 millicuries as specified in 10 CFR 40.36(b).
 - B. For sealed sources, to quantities less than 10^{10} times the applicable limits in Appendix B, 10 CFR Part 30 as specified in 10 CFR 30.35(d) and 10 CFR 40.36(b).

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License No.
09-11149-03Docket No. 030-14904
(Supersedes 09-21233-02)Amendment No.
09

29. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The U. S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.


- A. Application dated February 21, 2003 [renewal]
B. Letter dated August 14, 2003 [clarified possession limits for financial assurance]



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

DATE AUG 15 2003

BY


Bryan A. Parker
Region II, Division of Nuclear Materials Safety
61 Forsyth Street, Suite 23T85
Atlanta, Georgia 30303-8931